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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,927	07/10/2003	Louis B. Rosenberg	IMM053A	9912
34390 7590 07/21/2008 PATENT DEPARTMENT (51851) KILPATRICK STOCKTON LLP 1001 WEST FOURTH STREET WINSTON-SALEM, NC 27101				
EXAMINER				
LIANG, REGINA				
ART UNIT		PAPER NUMBER		
2629				
MAIL DATE		DELIVERY MODE		
07/21/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/615,927

Applicant(s)

ROSENBERG ET AL.

Examiner

Regina Liang

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 44-69 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 44-69 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☒ Information Disclosure Statement(s) (PTO/SG/US)
Paper No(s)/Mail Date 3/10/08
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This Office Action is responsive to amendment filed 3/27/08. Claims 44-69 are pending in the application.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

3. Claims 44-50, 52, 65-68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bakoglu et al (US 5,685,775 hereinafter Bakoglu) in view of Pierce et al (US 5,299,810 hereinafter Pierce).

As to claim 44, Bakoglu discloses a method and apparatus for playing the same video game by a number of players at remote locations over a telephone network. Fig. 2 of Bakoglu discloses an apparatus, comprising a network interface (203); a peripheral interface (control unit); a processor (video game machine by player 1) coupled to the network interface and the peripheral interface, the processor being associated with a first simulation of a virtual environment including a first virtual object (graphic images displayed by the TV of the player 1) a remote processor (video game machine by player 2) being associated with a second virtual object within the virtual environment (graphic images displayed by the TV of the player 2).

Bakoglu does not disclose the processor configured to receive the signal associated with the second virtual object and to send to the peripheral interface a signal associated with a haptic

feedback based on a virtual interaction between the first virtual object and the second virtual object.

Figs. 1 and 2 of Pierce discloses an apparatus comprising a peripheral interface (62, 66, 68, 72, 90, 92); and a processor coupled (42, 74) being associated with a first simulation of a virtual environment (space 48) including a first virtual object (58), the processor configured to receive a signal associated with a second virtual object (60) within the virtual environment, the processor configured to send to the peripheral interface a signal associated with a haptic feedback based on a virtual interaction between the first virtual object and the second virtual object (col. 1, line 57 to col. 2, line 10; col. 5, lines 17-45; col. 9, lines 32 to 60 for example).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Bakoglu to receive signal associated with the second virtual object within the virtual environment and to send to the peripheral interface a signal associated with a haptic feedback based on the virtual interaction between the first virtual object and the second virtual as taught by Pierce so as to provide a realistic simulation of the control of the game play and to provide multi-sensor indication of events that are initiated by another operator, or the computer.

As to claim 45, Pierce discloses the processor is configured to receive from the peripheral interface a signal associated with a position of a manipulandum ("the computer 74 is electrically connected to the position sensors that are associated with the steering handle 62 and accelerator pedal 66. These sensors generate electrical control signals that are representative of the positions of the steering handle 62 and accelerator pedal 66. the electrical control signals are in turn

conducted to the computer 74”), the processor is configured to send a signal associated with the first virtual object based on the position of the manipulandum (col. 5, line 59 to col. 6, line 30).

As to claim 46, Pierce discloses the processor being a first processor (42, 74), wherein the signal associated with the haptic feedback is configured to compensate within the first simulation for a delay between signals associated with the first virtual object and the signal associated with the second virtual object (col. 6, lines 31-56).

As to claim 47, Bakoglu teaches a second processor (video game by player 2) in communication with the first processor (video game by player 1) over a network (203); Pierce teaches the first processor (first computer 74) defining the first simulation of the virtual environment (48, 52), the second processor (computer 76) defining a second simulation of the virtual environment (48, 50), the first simulation substantially corresponding to the second simulation (col. 5, line 59 to col. 6, line 56).

As to claim 48, Pierce discloses the signal associated with the haptic feedback being a first signal, the apparatus further comprising: a manipulandum (the position sensor s of 62, 66, 68, 72, 90, 92); an actuator (80-83) coupled to the manipulandum; and a second processor coupled to the actuator and the peripheral interface, the second processor configured to receive the first signal from the peripheral interface, the second processor configured to send a second signal to the actuator based on the first signal, the actuator configured to provide haptic feedback based on the second signal (col. 6, line 50 to col. 7, line 39 for example).

As to claim 49, Pierce discloses comprising: a manipulandum having at least one degree of freedom (inherent the position sensor of the steering handle 62 having at least one degree of freedom); an actuator (80-83) coupled to the manipulandum; a sensor configured to detect a

position of the manipulandum in the at least one degree of freedom; and a second processor (44, 76) coupled to the sensor and the peripheral interface (68, 72), the second processor configured to send a position signal to the peripheral interface based on the position of the manipulandum, the first processor configured to send to the network interface a signal associated with the first virtual object based on the position signal (col. 5, line 59 to col. 6, line 30 for example).

As to claim 50, Bakoglu teaches the network interface being a modem connection.

As to claim 52, Pierce discloses the signal associated with the haptic feedback includes a positional offset (image 114), the positional offset being associated with a difference between the first virtual object and the second virtual object within the first simulation (col. 9, lines 46-60 for example).

As to claim 65, Bakoglu teaches a second processor being remote to a first processor (note the discussion of claim 44 above). Pierce discloses enabling a first simulation of a virtual environment on a first processor (Fig. 2, 42, 74) and a second simulation of the virtual environment on a second processor (42, 76), the first processor being in communication with a first haptic feedback device (26), the second processor being in communication with a second haptic feedback device (28); enabling the first processor to provide a first signal to the first haptic feedback device based on an interaction between a first virtual object and a second virtual object within the first simulation, the interaction within the first simulation being based on a position signal from the haptic feedback device of the first processor and a signal associated with the second virtual object from the second processor; and enabling the second processor to provide a second signal to second haptic feedback device based on an interaction between the first virtual object and the second virtual object within the second simulation, the interaction

within the second simulation being based on a position signal from the haptic feedback device of the second processor and a signal associated with the first virtual object from the first processor (col. 1, line 57 to col. 2, line 10; col. 5, lines 17-45; col. 9, lines 32 to 60 for example).

Therefore, Bakoglu as modified by Pierce would have the method as claimed.

As to claim 66, Pierce disclose comprising: enabling synchronization between the first simulation and the second simulation based, at least in part, on the signal to the haptic feedback device of the first processor and the signal to the haptic feedback device of the second processor (col. 6, line 50 to col. 7, line 39 for example).

As to claim 67 Pierce discloses the first processor is a first video-gaming console (12, 42, 62, 66, 74, 90), the haptic feedback device (26) associated with the first processor is a first controller; and the second processor is a second video-gaming console (14, 44, 68, 72, 76, 92), the haptic feedback device (28) associated with the second processor is a second controller.

As to claim 68, Pierce discloses the first controller includes a manipulandum (62, 66, 90), the position signal from the first controller being based on a position of the manipulandum of first controller; and the second controller includes a manipulandum (68, 72, 92), the position signal from the second controller being based on a position of the manipulandum of first controller.

4. Claims 51, 53-64, 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bakoglu and Pierce, and further in view of Ouhyoung et al. ("A low-Cost Force Feedback Joystick and its use in PC Video Games", IEEE Transactions on Consumer Electronics, Vol 41. No. 3, AUGUST 1995 pages 787-794) and Kelley et al. ("MagicMouse: Tactile and Kinesthetic

Feedback in the Human-Computer Interface using an Electromagnetically Actuated Input/Output Device).

As to claims 51, 53, 59, 69, Bakoglu as modified by Pierce discloses the apparatus and method as claimed except for a local processor coupled to the actuator and the sensor. Ouhyoung teaches a local controller with the above claim features in figures 3b and 3c and note also used in a PC Video Game. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Bakoglu as modified by Pierce's device to have the local processor as taught by Ouhyoung because Kelley et al on page 9 makes a motivational statement, "a dedicated microcontroller is employed to distribute the computational load and to afford adequate force feedback".

As to claims 54-58, 60-64, the combination of Bakoglu, Pierce, Ouhyoung and Kelly teaches all the limitation as claimed.

Response to Arguments

5. Applicant's arguments with respect to claims 44-69 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Regina Liang whose telephone number is (571) 272-7693. The examiner can normally be reached on Monday-Friday from 8AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe, can be reached on (571) 272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Regina Liang/
Primary Examiner, Art Unit 2629